

## **ERTTER'S OR WALKER PASS MILKVETCH**

*Astragalus ertterae*

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**Management Status:** Federal: USFWS Species of Concern; BLM Sensitive  
California: S1.3, G1 (CDFG, 1998)  
CNPS: List 1B, R-E-D code 3-1-3 (Skinner and Pavlik, 1994)

### **General Distribution:**

Ertter's milkvetch is a narrowly distributed endemic with three known populations, all occurring on Federal lands. Its distribution is limited to the Walker Pass area in the southern Sierra Nevada Mountains, Kern County, California, with all known populations occurring along the Pacific Crest Trail (PCT; Barneby and Shevock, 1987). One population is located at the first saddle southwest of Walker Pass, a second population occurs approximately 1.5 mi. (2.5 km) southwest of the pass, and a third population is about 1.5 mi. (2.4 km) north of the pass. The two southern populations occur in the Sequoia National Forest (SNF; outside the planning area), while the third (northern most) population occurs within the BLM Caliente Resource Area (just outside the planning area). According to the most recent reports in the California Natural Diversity Data Base (CNDDB), it is estimated that there are about 700 plants between the two occurrences on Forest Service managed land and approximately 50 plants in the occurrence on BLM managed land (CNDDB, 1997).

### **Distribution in the West Mojave Planning Area:**

None of the known populations occur within the WMPA, the northern population which is approximately 1.5 mi. (2.5 km) north of Walker Pass is just outside the planning area. Barneby and Shevock (1987) and J. Shevock (pers. comm., 1997) reported that there is additional habitat along the western slope of the crest of the southern Sierra Nevada (away from the PCT) that appears to be suitable for Ertter's milkvetch, however, only these three populations are known to exist.

### **Natural History:**

Ertter's milkvetch is a low growing to procumbent herbaceous perennial in the pea family (Fabaceae, tribe Papilionoideae). It was first described in 1987 from a collection made in 1982 along a newly constructed section of the PCT (Barneby and Shevock, 1987). The entire aerial portion of the plant, except the petals and fruit, is covered with fine hairs. It has a woody tap root, a short buried caudex, and typically has about half of the stem length underground. The stems (2-6 per plant) can attain lengths to 4 in. (10 cm) with the four to five leaves and one to three peduncles all crowded on the upper part of the stem. The leaflets (9-13) are oblanceolate with blunt to narrowly notched tips and have a greenish-cinereous appearance. The crowded and ascending inflorescences have seven to seventeen flowers with cream colored petals that bloom from April to May. The

swollen glabrous pods are pendulous, triangular in cross section, and dehisce apically (Spellenberg, 1993).

The distinct features of the pod (as described in Barneby and Shevock, 1987) readily distinguish it from the other *Astragalus* species reported in the area by Twisselmann (1967). Its closest relative appears to be crested milkvetch (*A. bicristatus*, sect. *Bicristati*; Barneby, 1964), a localized species in the San Gabriel and San Bernardino Mountains (Barneby and Shevock, 1987; Munz, 1974). Ertter's milkvetch differs from crested milkvetch in geographic range and in having a plump triangular pod, dwarf stature, smaller flowers, and fewer ovules (Barneby and Shevock, 1987). Other less closely related and similar species are Webber's milkvetch (*A. webberi*), Beckwith's milkvetch (*A. beckwithii*), and Cima milkvetch (*A. cimae*; Barneby and Shevock, 1987).

The biology of Ertter's milkvetch appears to have escaped study. There is no mention in the literature of the extent of fruit or seed set for this plant. The existence of predation on the seeds, as is common with other *Astragalus*, is also not known. Likewise, there appears to be no information available on pollination, seed dispersal, or germination requirements of this species.

### **Habitat Requirements:**

This taxon is highly restricted and only occurs in openings within pinyon-juniper woodland. It grows in the sandy-loamy to granitic soils associated with pinyon pines and canyon live oaks. It is primarily found on west-facing slopes from 5600-6200 ft. (1705-1890 m). Other major plant associates include sulfur-flowered buckwheat (*Eriogonum umbellatum*), heliotrope (*Phacelia* spp.), big sagebrush (*Artemisia tridentata*), and mountain-pennyroyal (*Monardella odoratissima*). Although it has been reported that suitable habitat appears to be common in pinyon-juniper woodlands on the west slope of the crest in the southern Sierra Nevada, only three populations have been documented (Barneby and Shevock, 1987). This species' highly restricted and endemic nature may indicate that 1) there are precise habitat requirements that have yet to be identified; 2) this plant is a fire follower, as is common with other *Astragalus*, and possibly exists as a dormant seed bank in suitable habitat; or 3) all suitable areas have yet to be searched. Botanical collecting and documentation in the southeastern Sierra Nevada has been sparse to date, due to its remote location, limited access, lack of potable water, and the rugged conditions. In the past 15 years, a number of new species have been described from this area, including Ertter's milkvetch. Further exploration of this area may yield more Ertter's milkvetch populations as well as additional new species (Shevock, 1987).

### **Population Status:**

Ertter's milkvetch has three known populations, all of which occur in the Walker Pass area in the southern Sierra Nevada, Kern County, along the PCT. The largest population, at the first saddle southwest of Walker Pass (SNF), consists of approximately 500 individuals. The other two populations, approximately about 1.5 mi. (2.5 km) southwest of the pass (SNF) and 1.5 mi. (2.5 km) north of the pass (BLM), consist of about 200 and about 50 individuals, respectively, according to the CNDDDB (CDFG, 1997).

### **Threats Analysis:**

Threats to this species have not been well documented, and in fact none are listed by the CNDDDB (CDFG, 1997). Potential threats include grazing, trampling, trail maintenance, over collection, and stochastic events.

Cattle grazing could severely threaten this species, however, according to Shevock (pers. comm., 1997) this is unlikely due to the isolated location of the populations and the lack of water for cattle in the area. Despite the fact that cattle grazing permits are issued for the area by the Sequoia National Forest (Shevock, pers. comm., 1997), threats from cattle grazing are here considered potential, but minimal.

There is a possible threat from foot trampling due to the proximity of the PCT, which bisects two of the populations (Shevock, pers. comm., 1997). Construction and maintenance of the PCT is also a threat that has already caused the destruction of part of two populations (Shevock, pers. comm., 1997). Presumably most hikers remain on the trail, so the extent of the trampling threat is not likely to be great, and presumably there will be little further trail construction occurring, thus leaving only maintenance as a continuing threat. Perhaps the PCT could be rerouted in the future to avoid these occurrences altogether.

Human collection may be a threat to this species (G. Harris, pers. comm., 1997), but this appears very unlikely to be significant according to J. Shevock (pers. comm., 1997). There is no known collecting of this species except, rarely, for scientific purposes. The isolated location and lack of scientific plant collectors makes a significant impact from this activity appear very unlikely (A. Sanders, pers. comm., 1997). Scientific collectors are more likely to document additional populations than they are to eradicate known ones. The collecting threat is obviously greater for smaller populations, such as that population of 50 plants on BLM land, than it is for larger stands. The removal of five plants from a population of 50 would obviously be a larger impact than the removal of a similar number from a larger population. Casual flower pickers are not likely to completely destroy a plant in picking, but rather are likely to “top snatch” a few plants. Digging up the roots is more work than most casual collectors are likely to attempt.

This plant may be vulnerable to stochastic extinction events due to its highly restricted distribution, the limited number of populations, and the small number of individuals per population (CDFG, 1997).

There is no known threat to the habitat or range by urban or private development or road maintenance since all three populations occur on remote federal lands. The ruggedness of the terrain reduces the potential threats from off road vehicles. Threats from mineral exploration and development and water developments and impoundments are unknown. There is no known threat from disease or predation, but no information as well as the species has never been studied in this respect.

It should be noted that the plants extremely limited distribution and small population sizes magnify any threat affecting this species.

There are currently no existing regulatory mechanisms protecting Ertter's milkvetch. It is not afforded protection under state or federal laws, though all of the known populations are on federal lands, which does offer some protection.

### **Biological Standards:**

Until the distribution and ecology of this species are better understood, effective management is not possible. There is considerable habitat that appears to be suitable for this species in pinyon juniper woodlands on the west slopes of the crest of the southern Sierra Nevada. The highest immediate priority for this species must be the initiation of comprehensive surveys of this potential habitat to determine the precise status of this plant. Until its status has been clarified by further surveys, the most important aspect of maintaining the long term viability and evolutionary potential of Ertter's milkvetch is to protect the few known population sites from disturbances that would depress or eliminate populations. If this plant truly is as rare as presently believed, it is crucial that all existing populations be protected. All potential habitat areas should be considered in all land management decisions by Sequoia National Forest and the BLM Caliente Resource Area, and careful surveys should be required before any actions are permitted which could potentially damage populations of Ertter's milkvetch, either known or yet to be discovered.

**Literature Cited:**

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